

WHAT IS CLAIMED IS:

1. A step motor comprising:
 - a rotor having four magnetic poles;
 - 5 a first magnetic pole magnetically excited by a first coil;
 - a second magnetic pole magnetically excited by a second coil; and
 - a third magnetic pole magnetically excited by the
 - 10 first coil and the second coil;
 - wherein a gap between the third magnetic pole and the rotor is smaller than that between the first magnetic pole and the rotor and that between the second magnetic pole and the rotor.
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2. The step motor as claimed in claim 1, wherein:
 - the rotor has a shape of cylinder;
 - a stator having a plan view of substantially
 - 20 lateral U-shape is arranged to face a circumferential surface of the rotor;
 - the first magnetic pole and the second magnetic pole are provided on both ends of the stator; and
 - the third magnetic pole is provided in the center
 - 25 of the stator.
3. The step motor as claimed in claim 2, wherein:
 - the first coil is provided between the first
 - 30 magnetic pole and the third magnetic pole and the second coil is provided between the second magnetic pole and the third magnetic pole; and
 - the stator includes protrusions for preventing displacement of the first coil and the second coil.
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